JPAC Workshop
"Resilient Communities in North America"
New Orleans, Louisiana
9-10 July, 2012

From vulnerability to resilience : discourses, policy values and responses

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What could happen if we don´t act to create more resilient communities?

Resilient communities

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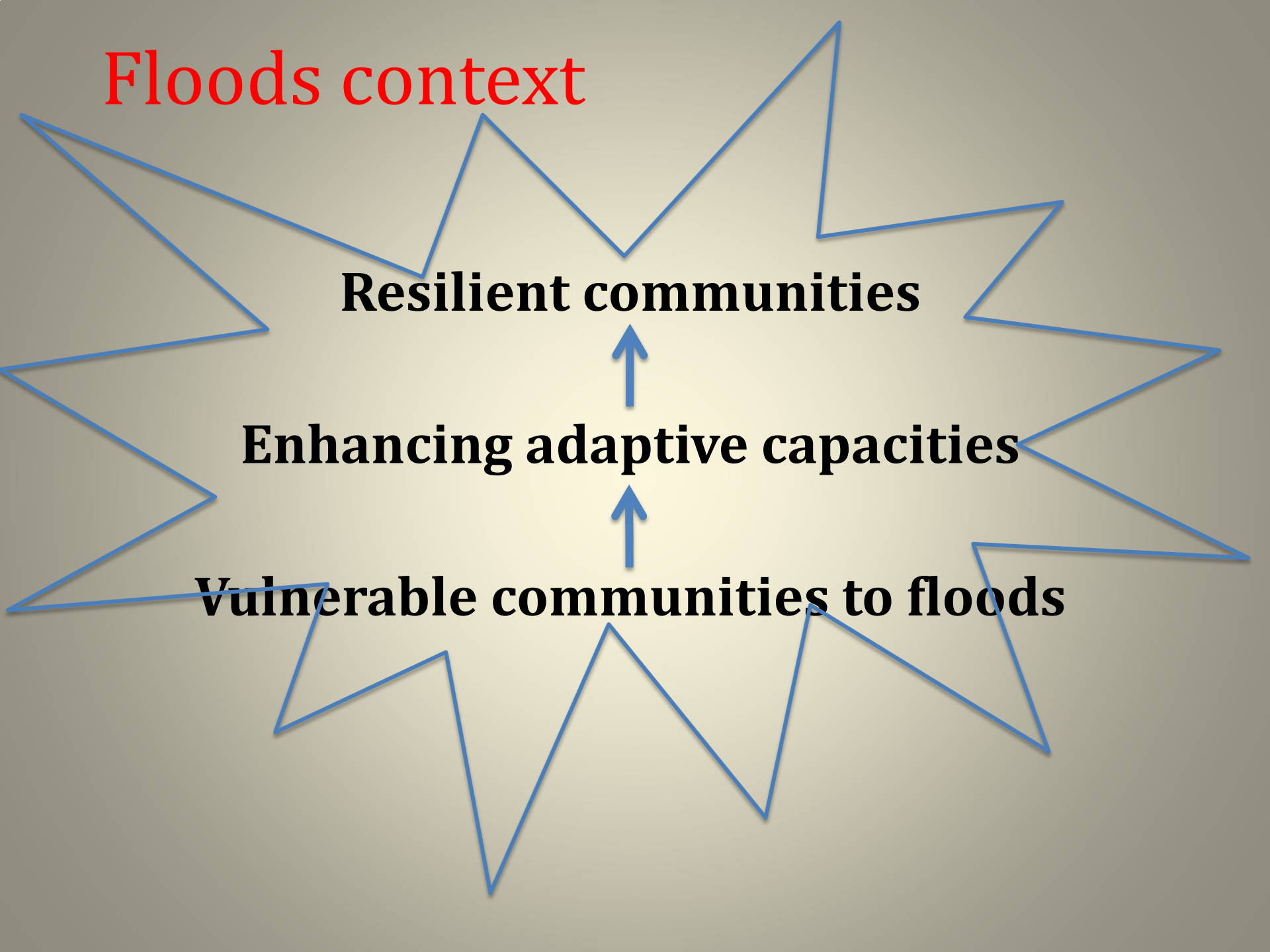# Enhancing adaptive capacities

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Vulnerable communities

Floods context

Resilient communities

Enhancing adaptive capacities

Vulnerable communities to floods

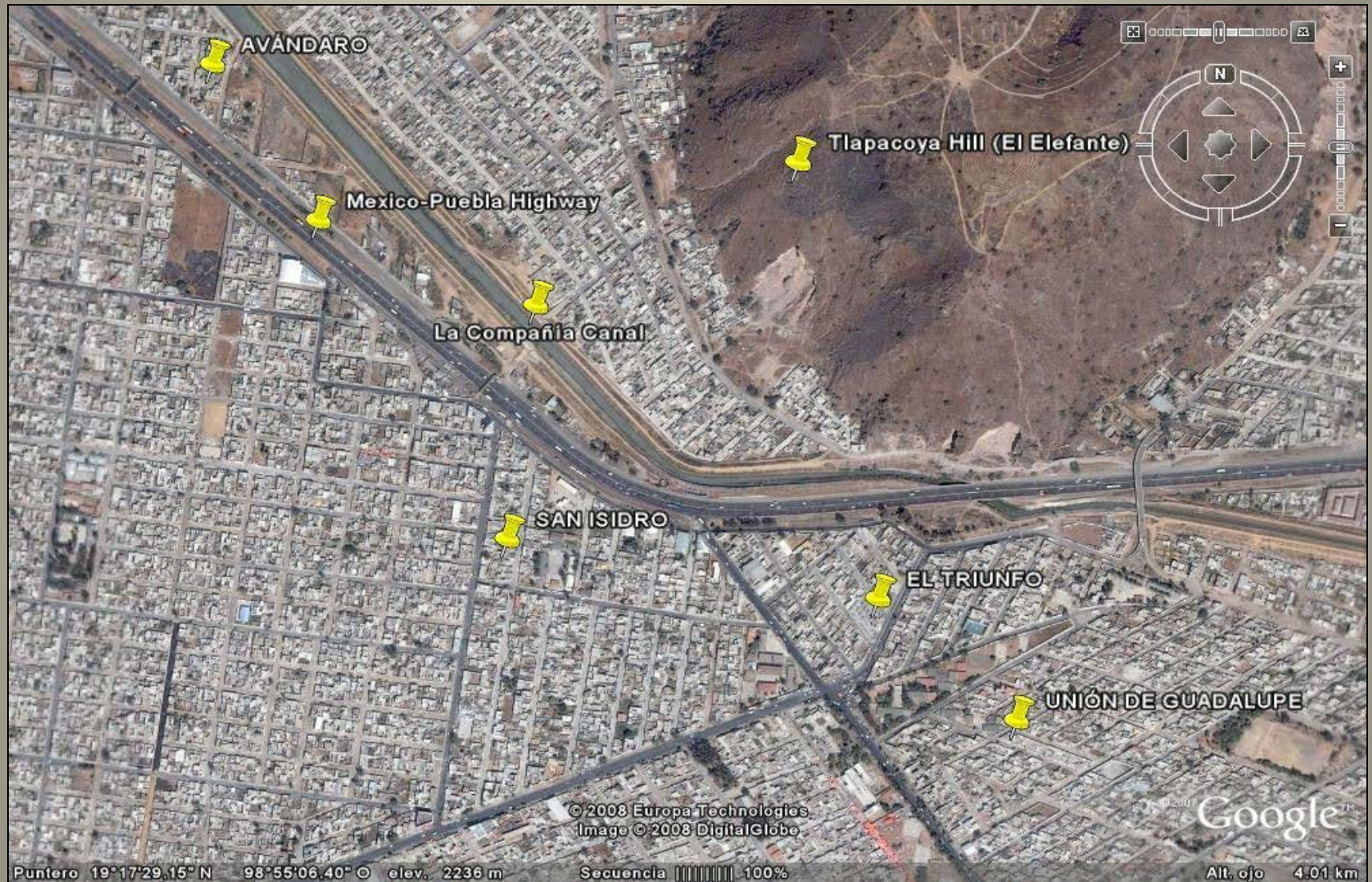How are communities framed in the context of floods?

To what extent discourses frame policy responses?

What are the practical implications of that when building resilient communities?

PHOTO 4. Location of the *Colonias* Avándaro, El Triunfo, San Isidro, and Unión de Guadalupe with regard to La Compañía Canal and the Mexico-Puebla highway.

Source: Google Earth, 2008; edited by Fernando Aragón (2008).

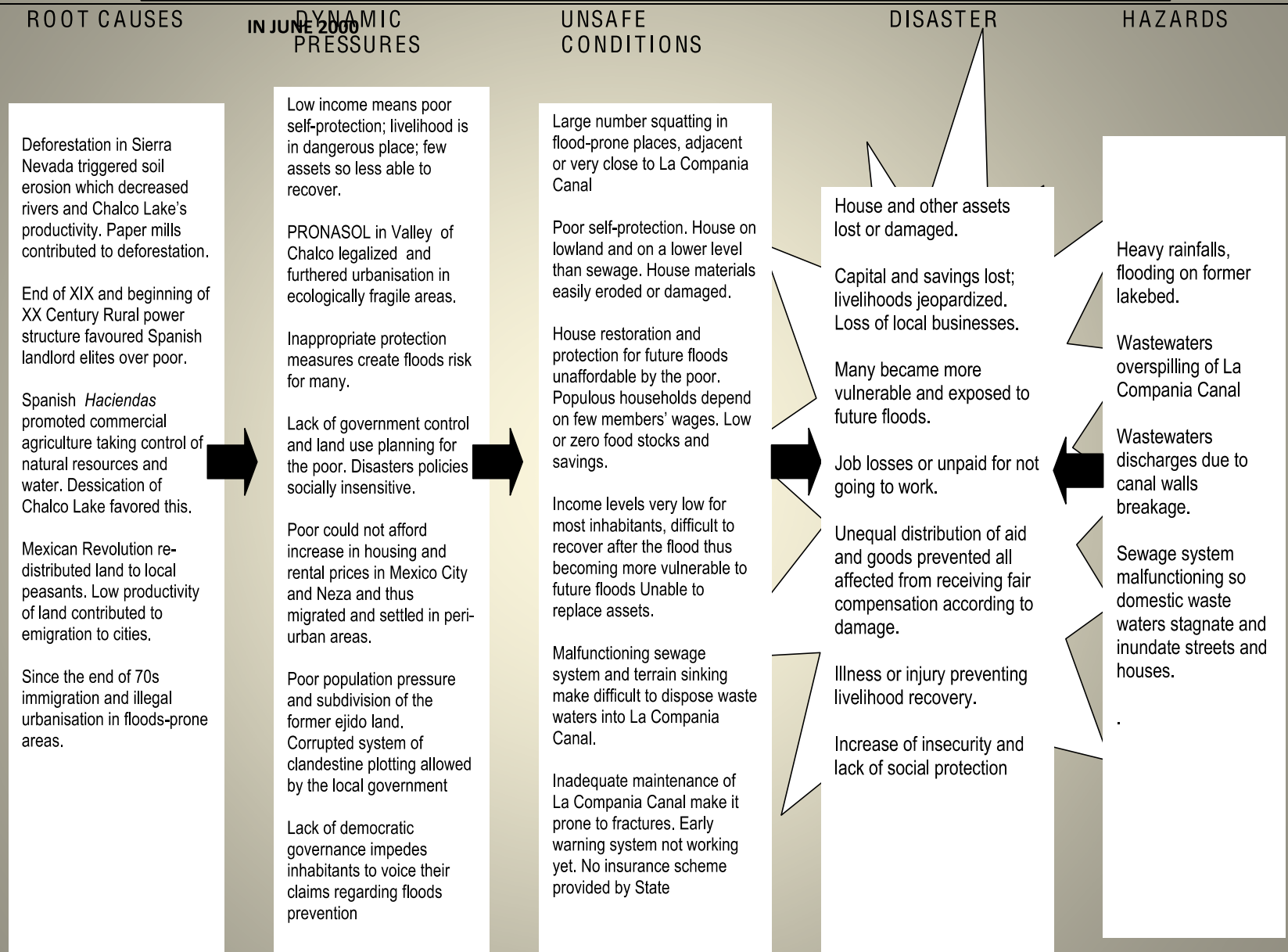# FIGURE 3. CHAIN OF CAUSATION THAT RESULTED IN CHALCO VALLEY'S FLOODS

ROOT CAUSES **DYNAMIC PRESSURES** IN JUNE 2000 **UNSAFE CONDITIONS** **DISASTER** **HAZARDS**

ROOT CAUSES

Deforestation in Sierra Nevada triggered soil erosion which decreased rivers and Chalco Lake's productivity. Paper mills contributed to deforestation.

End of XIX and beginning of XX Century Rural power structure favoured Spanish landlord elites over poor.

Spanish *Haciendas* promoted commercial agriculture taking control of natural resources and water. Dessication of Chalco Lake favored this.

Mexican Revolution re-distributed land to local peasants. Low productivity of land contributed to emigration to cities.

Since the end of 70s immigration and illegal urbanisation in floods-prone areas.

DYNAMIC PRESSURES

Low income means poor self-protection; livelihood is in dangerous place; few assets so less able to recover.

PRONASOL in Valley of Chalco legalized and furthered urbanisation in ecologically fragile areas.

Inappropriate protection measures create floods risk for many.

Lack of government control and land use planning for the poor. Disasters policies socially insensitive.

Poor could not afford increase in housing and rental prices in Mexico City and Neza and thus migrated and settled in peri-urban areas.

Poor population pressure and subdivision of the former ejido land. Corrupted system of clandestine plotting allowed by the local government

Lack of democratic governance impedes inhabitants to voice their claims regarding floods prevention

UNSAFE CONDITIONS

Large number squatting in flood-prone places, adjacent or very close to La Compania Canal

Poor self-protection. House on lowland and on a lower level than sewage. House materials easily eroded or damaged.

House restoration and protection for future floods unaffordable by the poor. Populous households depend on few members' wages. Low or zero food stocks and savings.

Income levels very low for most inhabitants, difficult to recover after the flood thus becoming more vulnerable to future floods Unable to replace assets.

Malfunctioning sewage system and terrain sinking make difficult to dispose waste waters into La Compania Canal.

Inadequate maintenance of La Compania Canal make it prone to fractures. Early warning system not working yet. No insurance scheme provided by State

DISASTER

House and other assets lost or damaged.

Capital and savings lost; livelihoods jeopardized. Loss of local businesses.

Many became more vulnerable and exposed to future floods.

Job losses or unpaid for not going to work.

Unequal distribution of aid and goods prevented all affected from receiving fair compensation according to damage.

Illness or injury preventing livelihood recovery.

Increase of insecurity and lack of social protection

HAZARDS

Heavy rainfalls, flooding on former lakebed.

Wastewaters overspilling of La Compania Canal

Wastewaters discharges due to canal walls breakage.

Sewage system malfunctioning so domestic waste waters stagnate and inundate streets and houses.

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Figure 1. Framework for analysing the discursive construction of 'Floods Causality as a Policy Problem' in the social domains of disaster.
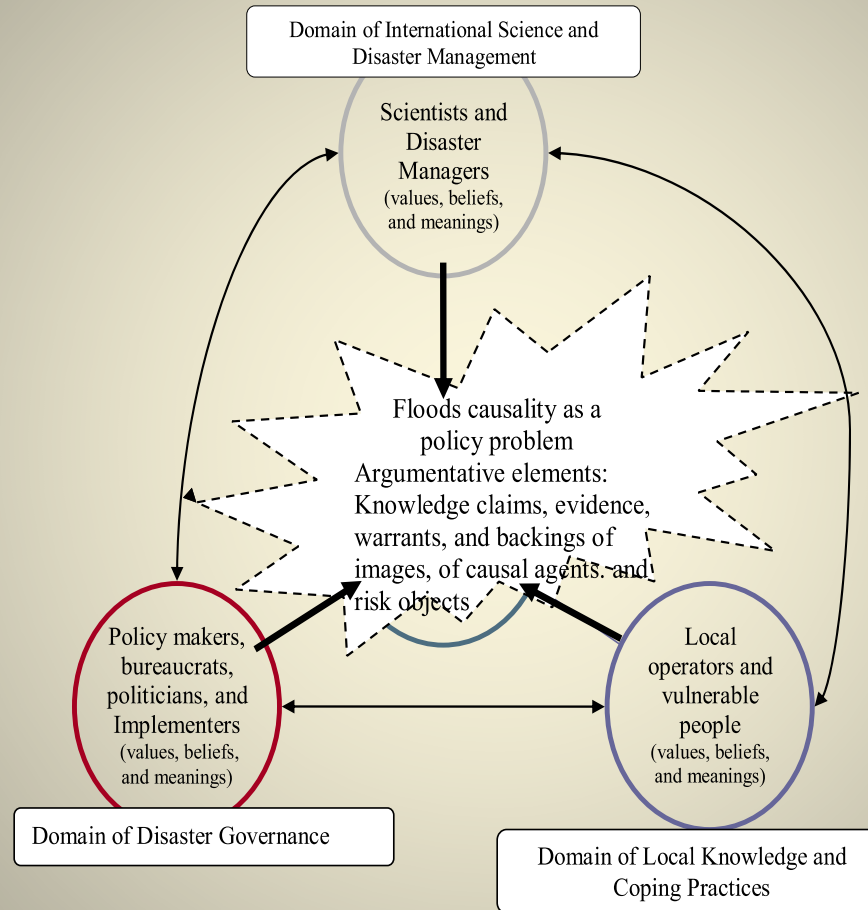
Table 4. Rhetorical elements of four constructions of the Chalco Valley's floods problem

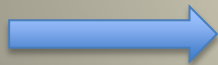| Causality Discourses of Chalco Valley's floods	Inadvertence by ignorance	Inadvertence by carelessness	Accidental	Structural
Problem Constructions				
Rhetorical	Ignorance of hazards and of unsafe conditions	Failure of infrastructure and sanitation system and inadequate monitoring of risk object	Accidents of nature and of man-made systems that disrupt human systems	Exposure of vulnerable people to hazards is consequence of socio-economic inequalities
Type of knowledge evidence	`Expert´ and experienced knowledge of natural, man-made hazards and risk.	Data of infrastructure capabilities and failures; operators technical expertise as practical knowledge	Scientific data of natural hazards, ecological dynamics and faulty man-made systems as well as institutional responses.	Socio-economic and political processes of development and technical knowledge of ecological change
Appeals and warrants	Moralist	Objectivist	Paternal	Ameliorative
Image of Chalco Valley people	Ignorants and culprits and sometimes potential victims	Hidden subjects	Passive subjects	Vulnerable
Image of the Government	Expert	Potential culprit when no action is taken	Protector	Planner/ illegal, land promoter
Image of hazards and La Compañía Canal	Threatening nature, `fixed` ecological dynamics	Infrastructure as a constant danger	Potential natural and man-made danger `separated` from society	Natural and man-made hazards transformed by and interacting with society

Table 5. Policy responses elements to four discursive constructions of Chalco Valley's floods problem

Floods causality policy problem	Causal agents and their motives	Policy objectives	Type of intervention	Policy instrument and implementation
1. Ignorance of hazards and unsafe conditions	`Ignorants` moving into unsafe places and `corrupt` politicians who promoted urbanisation ; nature as hazard and ´experts´ who know the ´objective´ risk	Education of `ignorants` to enhance (common) risk perception and change behaviour to avoid hazards or ´co-exist´ with risk; to finally achieve a civil protection ´culture´	Top-down risk communication with regulatory control and law enforcement and in extreme cases, eviction of affected people	Information campaign, practice of emergency drills, posters and, guides to identify hazards, education programmes for promoting culture of civil protection
2. Failure of infrastructure and inadequate monitoring of risk object	Extreme natural hazards, heavy rainfalls, La Compañía Canal and ´careless´ government technicians and operators	Improvement of ´natural´ hazards forecasting and monitoring of the sources of risk to reinforce infrastructure	Scientific research for technical development; protection of lifelines and the people; public works to isolate hazards and reduce risk exposure	Contingency plans for protecting water and sanitation infrastructure. improvement of early warning systems and targeted funding for infrastructure development
3. Accidents of nature and of man-made systems that disrupt ´normal´ social functioning	Extreme natural hazards, heavy rainfalls, and ecological deterioration driven by human action	Emergency aid to save lives and protect people; evacuation of people from risk prone areas; mitigation of the damaged	Emergency management: preparedness and initial recovery; to foster coordination between public and private institutions of SINAPROC and civil society to improve participation	Emergency and ´prevention´ programmes; financing for mitigation: FONDEN, and operation of early warning systems
4. Vulnerability is a consequence of socio-economic inequalities	Extreme natural hazards interacting with people's vulnerability under unsafe conditions; government authorities allowing/ promoting illegal settlements	Socio-economic development and ecosystems sustainable conservation to reduce people's vulnerability	Mainstreaming disaster risk reduction into development policies and planning	Sustainable environmental management, poverty reduction and exposure limits to unsafe conditions; FOPREDEN